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SEX DIFFERENCES IN PRIMARY HEALTH CARE USE BEFORE AND AFTER HOSPITAL ADMISSION FOR ACUTE AND CHRONIC CONDITIONS. A REGISTER-BASED COHORT STUDY OF THE DANISH POPULATION AGED 60+

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Background Empirical studies have consistently reported that women have a mortality advantage at all ages as well as with respect to most adverse health conditions and stressful events during the life course. In seeking to explain this advantage, the existing literature has pointed towards the effects and the interactions of biological, behavioral, and social factors. Among the non-biological factors, a large body of previous research has shown that men tend to seek medical help later and less than women, which can lead to delays in diagnosis and treatment. In this study, we explore the sex differences in primary health care use, before and after admission to hospital for chronic and acute conditions to explore whether the sex differences in treatment-seeking behavior change when health worsens.

Data This is a population-based, longitudinal study with nationwide coverage of the population alive and residing in Denmark at age 60+ in 1999. The study population was identified by linking information from the National Health Service Register, the National Patient Register, and the Central Population Register, using a 5% random sample of the Danish population. The study population was followed up for hospital admissions within the period 1999–2008, and GP contacts within the period 1996–2011. We used a generalized additive mixed model (GAMM) to account for repeated observations and to allow non-linear trajectories within the observed period, which covers the three years before and after hospital admission.

Results We found women having consistently more GP contacts than men before and after admission to hospital. The sex differentials in GP contacts were consistently lower for chronic than for acute conditions. For chronic conditions, the sex differentials were small in both periods: while they narrowed in the period before, they were not significant in the period after admission to hospital. For acute conditions, the sex differentials were smaller in the period after admission to hospital when compared with the period before admission to hospital.

Conclusion Our study indicates smaller sex differences in primary health care use following health deterioration, pointing towards a narrowing of the sex differences in treatment-seeking behavior as a result of the presence of symptoms and the experience of a worsening of the health status.

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WHAT DRIVES MENTAL HEALTH INEQUALITIES IN THE UK? A REVIEW OF THEORY AND THEORY-BASED EVIDENCE

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Rationale Globally, those living in less advantaged circumstances have an increased likelihood of having a common mental

disorder such as anxiety or depression, and a decreased likelihood that this disorder will be recognised, diagnosed and effectively treated. This is the mental health inequality, which causes significant unfair morbidity. The theory of fundamental causes posits that social circumstances drive health inequalities. Under this framework, social circumstances determine access to ‘resources’ such as money, knowledge, and connection to others. These resources are leveraged to avoid risks that lead to illness, or minimise illness. Such strategies are unavailable to people who have limited access to resources. Fundamental causes is well accepted as an overarching framework, but it is deliberately general as specific mechanisms of action will vary over time, setting and circumstance. Poor understanding about specific mechanisms of action, however, limits our ability to design effective interventions. Detailed theories that are compatible with fundamental causes have been described, but not well synthesised.

There is a large observational literature describing mental health inequalities in the UK but it is unknown whether this empirical evidence supports or refutes theoretical mechanisms of action.

Aim The overarching aim is to map theories and theory-based evidence to answer two related questions; *why*, and *how*, do social circumstances drive UK mental health inequalities?

Methods An iterative and flexible strategy of searching literature and expert consultation was applied to locate health inequality theories. Theories were included if they were compatible with fundamental causes and explained why social circumstances drive health inequalities in the developed world. Database searching was mainly used to amass observational studies from the UK that described mental health inequality in prevalence, diagnosis or treatment. A causal inference critique will be applied to studies that tested a theory, or used theory to explain results. Theories and associated support will be mapped in a logic model. If feasible, a simplified, supported, model (or models) will be deduced.

Population health relevance Experimental or policy-driven interventions to improve population mental health and reduce inequalities are expensive and time-consuming. The evidence base is consequently sparse. Other than in general terms, e.g. downstream interventions increase inequalities, the use of theory in developing mental health interventions is underutilised. This review will highlight evidence-based plausible mechanisms of action which could be used to inform the design of robust mental health interventions that operate at the maximal point to improve population health while reducing inequalities.

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ARE MENTALLY DISORDERED OFFENDERS ADEQUATELY PLACED TOWARDS REGULAR OR FORENSIC CARE SETTINGS ACCORDING TO SECURITY NEEDS? A CROSS SECTIONAL STUDY

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Rationale Access to mental health care for Mentally Disordered Offenders (MDOs) is a common issue across Western countries. MDOs are people with mental disorders who have committed a criminal offence. Their legal condition adds complexity to the multiple fields already involved in regular

mental health care: psychiatry, social, and behavioural care. So far, the organisation of care for MDOs differs greatly across countries and research on security needs remains inconclusive. In particular, access to appropriate care for MDOs is hindered by society and MDOs' security needs, which conflicts with community-based, recovery-oriented standards for regular mental-health care.

Belgium is currently reforming its care organisation for MDOs with the goal of delivering community, recovery-oriented care within the most appropriate security setting. MDOs placement should ensure the lowest secure settings regarding needs of security. However, MDOs placement is regulated by a legal decision, which is not based on formal guidelines. In these conditions, it is unknown whether MDOs' placement in regular or forensic care settings according to security needs is appropriate.

Aim Therefore, we assessed how well placement matches MDOs' and society security needs.

Methods As part of a broader reform evaluation process, routinely collected data on MDOs' care placement in 2017 were retrieved. Placement settings covered the whole country and four out of five security levels: regular mental-health care and forensic low, medium, and high security settings. All MDOs that were placed during 2017 were included. Data included sociodemographics, clinical, and legal status of MDOs, the sending and receiving services, and an evaluation of severity of symptoms and security needs carried out with the HoNOS-Secure. The primary outcome was the appropriateness of placement to security levels according to security need assessment controlled for MDOs' individual characteristics (multinomial logistic regression). Secondary outcomes included an assessment of the care pathway through the sending and receiving services, and descriptive statistics of the population in the several security level settings.

Population health relevance Appropriateness of care placement for MDOs is needed to improve care access, quality, and social rehabilitation. Placement assessment is required to support authorities and professionals for the development of care facilities. In addition, more evidence on the relevance of personalised and community-based care models for MDOs' is needed.

P65 ASSOCIATION OF FOOD OUTLET DENSITY AND OBESITY: A CROSS-SECTIONAL STUDY OF URBAN AREAS IN MEXICO

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Background Obesity is an important and highly prevalent risk factor for non-communicable diseases in both developed and developing countries. Obesity prevalence is influenced by a complex, multifaceted system of determinants among which the food retailing and advertising environment is pivotal. Current food environments are often characterised by pervasive exposure to unprecedented availability and marketing of energy-rich and nutrient-poor foods. Mexico has one of the highest obesity rates in the world: 70% of the population is overweight or obese. The country has experienced a dietary and food retail transition involving increased high-calorie-dense food and drink availability.

The aims of this study were 1) to analyse the associations between total food outlet density and BMI; 2) to examine the association of the retail food environment index (RFEI) and obesity; and 3) to study the association of the density of individual food outlets and obesity in Mexican adults in urban areas.

Methods The National Institute of Statistics and Geography in Mexico provided geographical and food outlet data; BMI, calculated from anthropometric measurements, and socio-economic characteristics of a nationally-representative sample of adults aged 18+, came from participants in the National Health and Nutrition Survey in Mexico (ENSANUT) 2012. I calculated densities of supermarkets, restaurants, chain and non-chain convenience stores, and fruit and vegetable stores in total and by individual type per 1000 people per census tract area, using ArcGIS. I calculated RFEI, the ratio of 'unhealthy' to 'healthy' food outlets. Using multilevel linear regression, I analysed the relationship between density of food outlet types and obesity using complex survey design in STATA14. All analyses were adjusted for sex, age, socioeconomic status and physical activity.

Results Both non-chain convenience store density [$\beta=3.10$, 95% CI 0.97 to 5.23, $p=0.004$] and non-chain combined with chain-type convenience store density [$\beta=2.71$, 95% CI 0.63 to 4.80, $p=0.011$] were significantly associated with obesity. Total food outlet density showed no significant association with obesity. However, the RFEI was associated with higher levels of obesity [$\beta=0.040$, 95% CI 0.00049 to 0.02, $p=0.040$].

Conclusion Convenience stores, which offer a greater availability of energy dense foods with low nutrient content, pose a risk to higher levels of obesity. A balance of healthier food outlets versus non-healthy food outlets could decrease the risk of obesity in urban areas of Mexico.

Correction: These abstracts have been updated since they first published. Abstract P64 (doi:10.1136/jech-2018-SSMabstracts.187) title and complete text have been corrected. Also, abstract RF9 (doi:10.1136/jech-2018-SSMabstracts.98) last four authors have been added.

Correction: *Evaluating the impact of the english health inequalities strategy on socioeconomic inequalities in the regional infant mortality rate*

Bourmorck D, Nicaise P, Molera-Gui M, *et al.* Evaluating the impact of the english health inequalities strategy on socioeconomic inequalities in the regional infant mortality rate. *J Epidemiol Community Health* 2018;72(Suppl 1):A88–A89. doi: 10.1136/jech-2018-SSMabstracts.187.

For abstract number P64 the wrong abstract title and text is associated with the abstract (the authors are correct). The correct title and text is below.

P64

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